

USSR/Microbiology - Microorganisms Pathogenic to Humans and
Animals.

F-4

Abs Jour : Ref Zhur - Biol., No 10, 1958, 43344

Author : Druzhinin, I.D., Kondratenko, G.P., Kryukova, Z.V.

Inst :

Title : Significance of Agglutination Reaction of Virus-Charged
Bacteria (AVB) in Laboratory Diagnosis of Scarlet Fever.

Orig Pub : Zh. mikrobiol., epidemiol. i immunobiologii, 1956 (1957),
23-24.

Abstract : The diagnostic significance of AVB reaction by the Wein-
berg and Tokar method in scarlet fever was studied. A
stock culture of typhoid fever bacteria #4277, killed by
heating for 1 hour at 56°, was charged with smears from
pharynxes of scarlet fever patients. As antibodies a
blood serum of scarlet fever convalescents was used, taken
on the 20-40th day of sickness. A mixture of sera from
6-8 convalescents was first exhausted by a thick suspension

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7 Abs Jour : Ref Zhur - Biol., No 10, 1958, 43344

of typhoid fever bacteria in order to eliminate the activity of typhoid fever agglutinins which might be contained in the convalescent's blood. Smears from pharynxes of 332 patients were examined once, and 4-6 times in 18 patients for a period of 4-6 weeks. In 63.3% of patients the smears were taken on the 2-6th day of disease, in 36.4% at later periods. 36 smears were taken from patients with atypical forms and 314 from patients with typical forms of scarlet fever of different severity. Of the 319 reactions studied 240 positive results and 43 doubtful were obtained. The average limiting agglutination titer was 1:72. Thus, with a single test of smears from the pharynx a diagnosis of scarlet fever was confirmed with the aid of AVB in 240 patients, i.e. in 68%. Repeated examinations of 18 patients showed that the antigen disappears between the 18th and 39th day of disease.

Card 2/3

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7 Abs Jour : Ref Zhur - Biol., No 10, 1958, 43344

Control examinations of 45 well persons and 7 children with measles produced 50 negative and 2 doubtful (patients with measles with a titer of 1:20) results. The authors consider that use of depleted and mixed sera from scarlet fever convalescents, which simplifies the reaction and increases the percentage of positive reactions, makes utilization of this method possible for diagnosing atypical cases of scarlet fever.

Card 3/3

DRUZHININ, I.D.; KONDRATENKO, G.P.; KRYUKOVA, Z.V.

Role of the agglutination of virus-coated bacteria in the laboratory
diagnosis of scarlet fever. Zhur.mikrobiol.epid. i immun., supplement
for 1956:23-24 '57 (MIRA 11:3)

1. Iz kafedry mikrobiologii i infektsionnoy kliniki Stalinskogo
meditsinskogo instituta.
(AGGLUTINATION) (SCARLET FEVER)

USSR/Microbiology, Microbes Pathologic for Man and
Animal

F

Abs Jor : Ref Zhur-Biol., No 13, 1958, 57732

Author : Kolomoitsev L. R., Druzhinin I. D., Zalogina V. S.

* Inst : ~~Not given~~

Title : Antigenic and Immunogenic Properties of the
Phytoncide Antidysentery Vaccine

Orig Pub : Zh. mikrobiol., epidemiol. i immunologii, 1957,
No 7, 135-136

Abstract : Results of the study of the antigenic and immu-
nogenic properties of phytoncyde (killed by the
action of volatile fractions of garlic) anti-
dysentery vaccine prepared from Flexner's strain
type W and heated and formalinized vaccine of
the same strain(the method is cited) are repor-
ted. The immunogenesis of the garlic vaccine and

Card 1/2

* Iz KAFEDRY MIKROBIOLOGII STALINSKOGO MEDITSINSKOGO INSTITUTA.

USSR/Microbiology. Microbes Pathogenic for Man and
Animals

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Abs Jour : Ref Zhur-Biol., No 13, 1958, 57732

Abstract : the prophylactic properties of the sera obtained upon the immunization of rabbits with this vaccine as well as the barrier fixation function in immunized mice was considerably higher than the corresponding indicators of the heated and formalinized vaccine.

Card 2/2

DRUZHININ, I.D.; KONDRATENKO, G.P.; LAZARENKO, N.P.

Bacterial contamination of mine water and viability of dysentery bacteria in such water. Gig. i san. 24 no.9:84-85 S '59.

(MIRA 13:1)

1. Iz kafedry mikrobiologii Stalinskogo meditsinskogo instituta i Stalinskoy gorodskoy sanitarno-epidemiologicheskoy stantsii.

(MINE WATER--BACTERIOLOGY) (SHIGELLA)

ZATS, L.B., doktor med.nauk; DRUZHININ, I.D., assistant; STRONGOVSKAYA,
N.V., assistant; OZHIGAR, I.V., laborant

Evaluation of the reaction of the agglutination of virus-coated
bacteria (AVB reaction) in the laboratory diagnosis of trachoma.
Oft.zhur. 15 no.7:413-417 '60. (MIRA 13:11)

1. Iz kafedry glaznykh bolezney i kafedry mikrobiologii Stalinskogo
meditsinskogo instituta imeni A.M.Gor'kogo.
(AGGLUTINATION)
(CONJUNCTIVITIS, GRANULAR)

KOLOMOYTSEV, L.R.; DRUZHININ, I.D.

Use of phage-impregnated discs in determining the sensitivity of bacterial cultures. Zhur.mikrobiol., epid. i immun. 33 no.3:40-41 Mr '62. (MIRA 15:4)

1. Iz kafedry mikrobiologii Donetskogo meditsinskogo instituta. (BACTERIOPHAGE)

DRUZHININ, Igor' (g. Leningrad)

Born from inspiration. Mest.prom. 1 khud.promys. 2 no.5:13-14
My '61. (MIRA 14:5)
(Jewelers--Technological innovations)

DUYSHENALIYEVA, N.; DRUZHININ, I.G.

Formation of complex compounds and the distribution of urea
in a solid system and in solutions. Izv. AN Kir. SSR. Ser.
est. 1 tekhn. nauk 3 no.2:73-82 '61. (MIRA 16:7)

(Urea) (Complex compounds)

DRUZHININ, I.G., otv. red.; BATYRCHAYEV, I.Ye., red.; BLESHTINSKIY,
S.V., red.; KONOPEL'KO, K.G., red.; KYDYNOV, M., red.;
SULAYMANKULOV, K., red.; FOMENKO, V.L., red.izd-va;
POPOVA, M.G., tekhn. red.

[Materials from the Conference Devoted to the Centennial of
the Birth of Academician N.S.Kurnakov] Sbornik materialov
Konferentsii, posvyashchennoi 100-letiiu so dnya rozhdeniya
akademika N.S.Kurnakova. Frunze, Izd-vo AN Kirgiz.SSR, 1963.
175 p. (MIRA 16:7)

1. Konferentsiya, posvyashchennaya 100-letiyu so dnya rozhde-
niya akademika N.S.Kurnakova.
(Kurnakov, Nikolay Semenovich, 1860-1941)
(Chemistry, Physical and theoretical)

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CA

1ST AND 2ND COVERS

PROCESSES AND PROPERTIES INDEX

Lake Elbtul. S. Z. Makarov and I. G. Drushinin.
Ann. soc. nat. phys.-chim., inst. chim. gen. (U. S. S. R.) 9, 343-74(1934).--The results of hydrologic and chem. investigation of Lake Elbtul (Western Siberia) are discussed. The problem of com. production of NaCl and Na_2SO_4 from the lake requires further study.
Chas. Blanc

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ASS. SLA METALLURGICAL LITERATURE CLASSIFICATION

ISSUE DIVISION

SECTION 41

ISSUE DATE

ISSUE TIME AND DAY

157 AND 159 ORDERS

PROCESSES AND PROPERTIES INDEX

160 AND 174 ORDERS

6

Solid solutions of the glaserite type of the sulfates and chromates of sodium and potassium. S. Z. Alabarov and I. G. Drushinin. *Bull. Acad. Sci. U. R. S. S., Classe sci. nat. Ser. chim.* 1937, 1291-1338 (in English 1328 p).

The systems K_2SO_4 - Na_2SO_4 - H_2O and K_2CrO_4 - Na_2CrO_4 - H_2O are characterized by the formation of definite chem. compds. $3K_2SO_4 \cdot Na_2SO_4$ (I) and $3K_2CrO_4 \cdot Na_2CrO_4$ (II), resp. I forms solid solns. with Na_2SO_4 up to the ratio $K:Na = 2.44$ at 25° . II forms solid solns. with both Na_2CrO_4 and K_2CrO_4 . The limits of the ratio $K:Na$ are from 2.29 to 3.10 at 25° . Thirty-six references.

John Livak

ASAC-500 METALLURGICAL LITERATURE CLASSIFICATION

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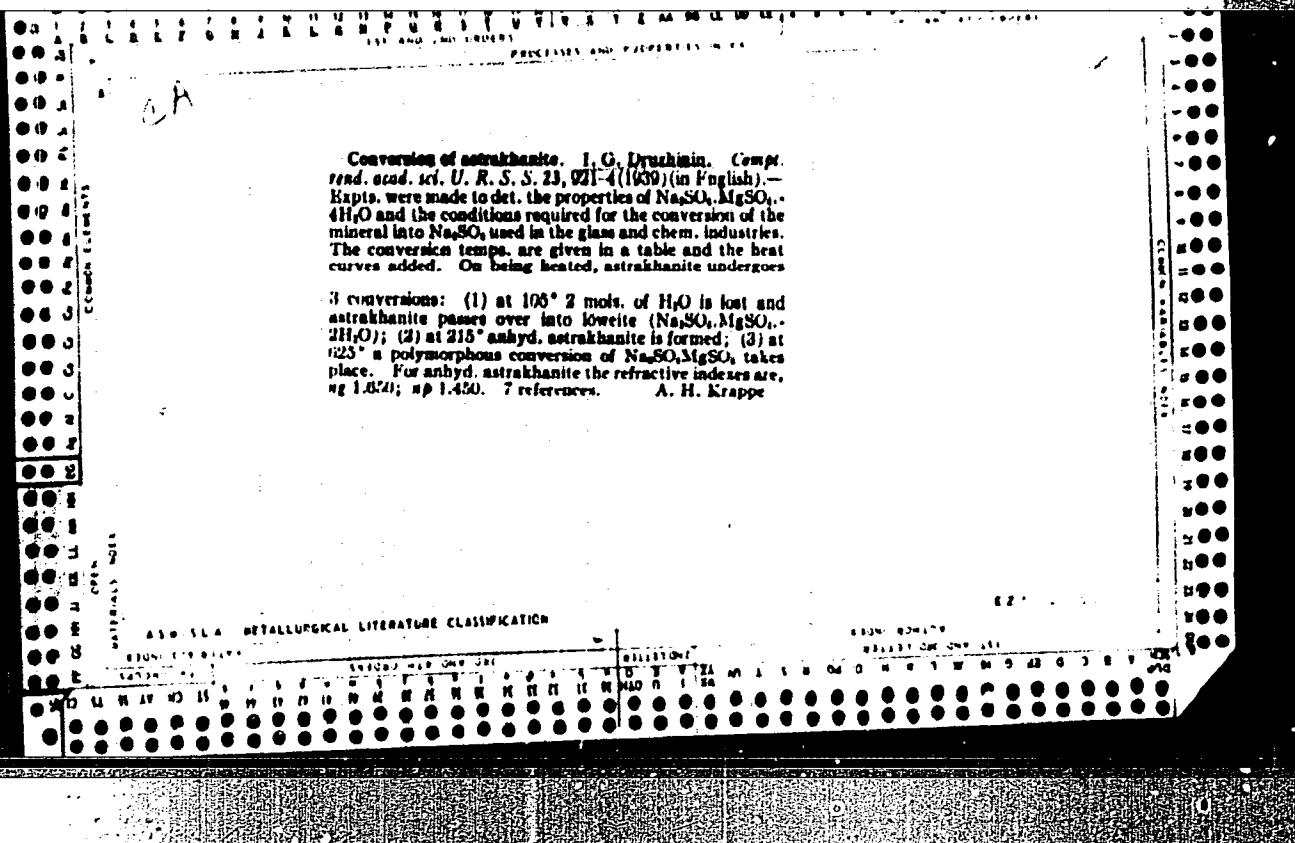
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BC

Nature of solid solutions of the glaserite and berthite type. I. G. DRUSMANIN (Bull. Acad. Sci. U.R.S.S., 1938, *Ser. Chim.*, 1141-1166).—Investigation of the systems K_2CrO_7 - Na_2CO_3 - H_2O and K_2SO_4 - Na_2SO_4 - H_2O shows the existence of glaserite $K_2Na(8O_4)_2$ and $K_2Na(CrO_4)_2$ capable of forming isomorphous mixtures with the original components. Solid solutions of $K_2Na(8O_4)_2$ and Na_2SO_4 exist in the range 2.44—3.00 atoms K per atom Na (23). Solid solutions of $K_2Na(CrO_4)_2$ with K_2CrO_7 occur containing up to 3.16, and of $K_2Na(CrO_4)_2$ with Na_2CrO_4 containing down to 2.39, atoms K per atom Na. In the system K_2CrO_7 - Na_2CO_3 - Na_2SO_4 - K_2SO_4 - H_2O glaserites of complex solid solutions are obtained. In the systems Na_2SO_4 - Na_2CO_3 - H_2O and Na_2CO_3 - Na_2CO_3 - H_2O the compounds $2Na_2SO_4$ - Na_2CO_3 and $2Na_2CO_3$ - Na_2CO_3 are formed and mix isomorphously with their components, the ranges of solid solutions existing at 35° being 1.48—2.19 mols. Na_2SO_4 , and 1.82—2.04 mols. Na_2CO_3 , per mol. Na_2CO_3 , respectively. Crystals of $K_2Na(CrO_4)_2$ were obtained in a new trigonal form. Pptd. berthite crystals consist of truncated bipyramids with a slightly developed rhombic prism. The conditions necessary for growth of the crystals are described.

F. H.



Salt reserves of Lake Elzits. I. G. Drushinin (*Compt. rend. Acad. Sci. U.R.S.S.*, 1941, 81, 891—892).—The salt deposited in Lake Elzits (Omsk region) when the lake is frozen consists chiefly of $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$ (I). Salts deposited by sedimentation consist of (II) (92.89%), NaCl (1.32%), MgSO_4 (0.20%), and $\text{Ca}(\text{HCO}_3)_2$ (traces).

In autumn and winter, the newly pptd. (I) covers the bottom of the lake to a depth of 25—30 cm. The bed of the lake consists chiefly of (I) (mirabilite). A. J. M.

[illegible]

[illegible]

PROCESSING AND RECORDING UNIT

BC

B-1-2

Preparation of solid solutions of aluminates and borates types. I. G.
 Petrovskii. *J. Appl. Chem. Russ.* 1958, 31, 94-100. Na₂CO₃ and
 Na₂B₄O₇ with a compound Na₂CO₃·Na₂B₄O₇, which is stable below 481°
 and gives solid solutions with Na₂CO₃. It is a good fertilizer for beet,
 rice, wheat, and potatoes. Borates, Na₂CO₃·Na₂B₄O₇, can be
 easily stored (it is non-hygroscopic) and is of use in glass-making.

A.S.B.S.A. METALLURGICAL LITERATURE CLASSIFICATION

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SYNOPTIC										SYNOPTIC									
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[illegible]

PRODUCTION AND RECOVERY INDEX

Production of salt from the Sbelty lake region. I. G. Dzhahimov. *J. Applied Chem. (U. S. S. R.)* 16, 314-11 (1943) (English summary); cf. C. A. 37, 854. Analyses of the salt mines from this region are given. The salt production from this lake is not wholly satisfactory, owing to the irregular settling processes. G. M. Kosolapov

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ADD-11.6 METALLURGY LITERATURE CLASSIFICATION

10000 11000 12000 13000 14000 15000 16000 17000 18000 19000 20000 21000 22000 23000 24000 25000 26000 27000 28000 29000 30000 31000 32000 33000 34000 35000 36000 37000 38000 39000 40000 41000 42000 43000 44000 45000 46000 47000 48000 49000 50000 51000 52000 53000 54000 55000 56000 57000 58000 59000 60000 61000 62000 63000 64000 65000 66000 67000 68000 69000 70000 71000 72000 73000 74000 75000 76000 77000 78000 79000 80000 81000 82000 83000 84000 85000 86000 87000 88000 89000 90000 91000 92000 93000 94000 95000 96000 97000 98000 99000

Glauber salt and common salt of Lake Elbitt. I. G. Drushinin, I. E. Drushinin, and E. V. Godzev (*J. Appl. Chem. Russ.*, 1944, 17, 144 - 150).—Naturally occurring Na_2SO_4 of Lake Elbitt has a purity of 94 - 98% and is suitable for industrial purposes. Reserves total 14.5 million tons. Small amounts (<2%) of NaCl are admixed with the Na_2SO_4 . Deposits of almost pure (98%) NaCl also occur, due to periodic pptn. In addition to chemical analysis, thermographic methods were also used in the examination of the various salts; the results do not support the existence of $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$. V. H.

DRUZHININ, I. G.

"Physicochemical Investigation and Industrial Utilization of the Sulfate Lake
Ebeyta," Sub. 12 Feb 47, Inst of General and Inorganic Chemistry imeni N. S. Kurnakov,
Acad Sci USSR.

Dissertations presented for degrees in science and engineering in Moscow in 1947.

SO: Sum.No.457, 18 Apr 55

DRUZHININ, I. G.

USSR/Chemistry - Salts
Brines

Aug 49

"Preparing Complex Salts Crystallized From the
Brines of Kara-Bogaz-Gol," I. G. Druzhinin, V. I.
Kholodov, I. S. Chelyadina, A. I. Lazareva, Inst
of Gen and Inorg Chem, Acad Sci USSR, 6 pp

"Zhur Prikl Khim" Vol XXII, No 8

Kara-Bogaz-Gol brines give variable yields of salts,
depending on the temperature. At 00 C, there is a
relatively high yield of magnesium sulfate; above
250 C, astrakhanite is obtained; and below 00 C,
mirabilite is the chief product. Saturated

67/49772

USSR/Chemistry - Salts (Contd)

Aug 49

sodium sulfate solutions yield as much as 268 kg
of mirabilite per 1 cubic meter of solution. Sub-
mitted 5 Jan 49.

67/49772

Chemical Abst.
Vol. 48 No. 4
Feb. 23, 1954
General and Physical Chemistry

Metastable solutions of calcium chloride and the temper-
ature limits of their existence. L. O. Drushinin and A. I.
Shcherbakov. Doklady Akad. Nauk S.S.S.R. 73, 703-4 (1950).
The system $\text{CaCl}_2\text{-H}_2\text{O}$ was studied in the temp. range
0-50°. The stable crystn. curve agrees well with data ob-
tained previously by Bassett, et al. (C.A. 31, 7231), with
 $\alpha\text{-CaCl}_2\cdot 6\text{H}_2\text{O}$ stable from 0°, 37.90% CaCl_2 to 30.1°, 49.73%;
 $\alpha\text{-CaCl}_2\cdot 4\text{H}_2\text{O}$ stable up to 48°, 55.82%, and $\text{CaCl}_2\cdot 2\text{H}_2\text{O}$
stable above that point. The data on the 3 metastable (β -,
and γ -) forms of $\text{CaCl}_2\cdot 4\text{H}_2\text{O}$ and their solns. diverged
somewhat from Bassett's results. $\gamma\text{-CaCl}_2\cdot 4\text{H}_2\text{O}$ exists in
equil. with solns. whose compos. lie on a curve from 39°,
55.82% to 19.7°, 50.82%; the β -form from 41°, 55.51% to
18.9°, 48.95%; and the α -form exists as a metastable form
(in the $\text{CaCl}_2\cdot 6\text{H}_2\text{O}$ region) from 30.1°, 49.73% to 14°,
45.39%. $\text{CaCl}_2\cdot 2\text{H}_2\text{O}$ exists in a metastable form down to
8°, 55.82%.

Arvid J. Miller

1/8/54
BW

DRUZHININ, I. G.

189714

USSR/Chemistry - Toxicology

Sep/Oct 51

Determination of Metallic Poisons in Biological Materials. I, "I. G. Druzhinin, P. S. Kisilevych, Lab of Peroxidic Compds, Acad Sci USSR and Khabarovsk Med Inst

"Zhur Analit Khim" Vol VI, No 5, pp 321-324

Worked out method for rapid accurate quant detn of Cu, Ag or Bi in org substances using "int electrolysis," i.e., without external elec current, for isolation of metal. Graphite elec

189714

USSR/Chemistry - Toxicology
(Contd)

Sep/Oct 51

trode (+Zn-Co2) can be used instead of expensive Pt. Method can be used for analysis of biol materials in forensic medicine, sanitary hygiene, and related flds.

189714

USSR/chemistry - Explosives, Perchlorates 11 Jun 52

"Solubility Diagram of the Ternary System NaClO_4 - NH_4ClO_4 - H_2O at 250," A. S. Karnaukhov, I. G. Druzhinin, Yaroslavl State Pedagogical Inst imeni K. D. Ushinskii

"Dok Ak Nauk SSSR" Vol LXXXIV, No 5, pp 963 - 966

A diagram of straight-line coordinates was constructed for the interaction of sodium and ammonium perchlorates in aq soln. The curve consists of 3 branches: one for the crystal of the anhydrous ammonium perchlorate, one for the solid soln $7\text{NH}_4\text{ClO}_4 \cdot \text{NaClO}_4$ and sodium perchlorate, and one for the sep into the solid phase

223712

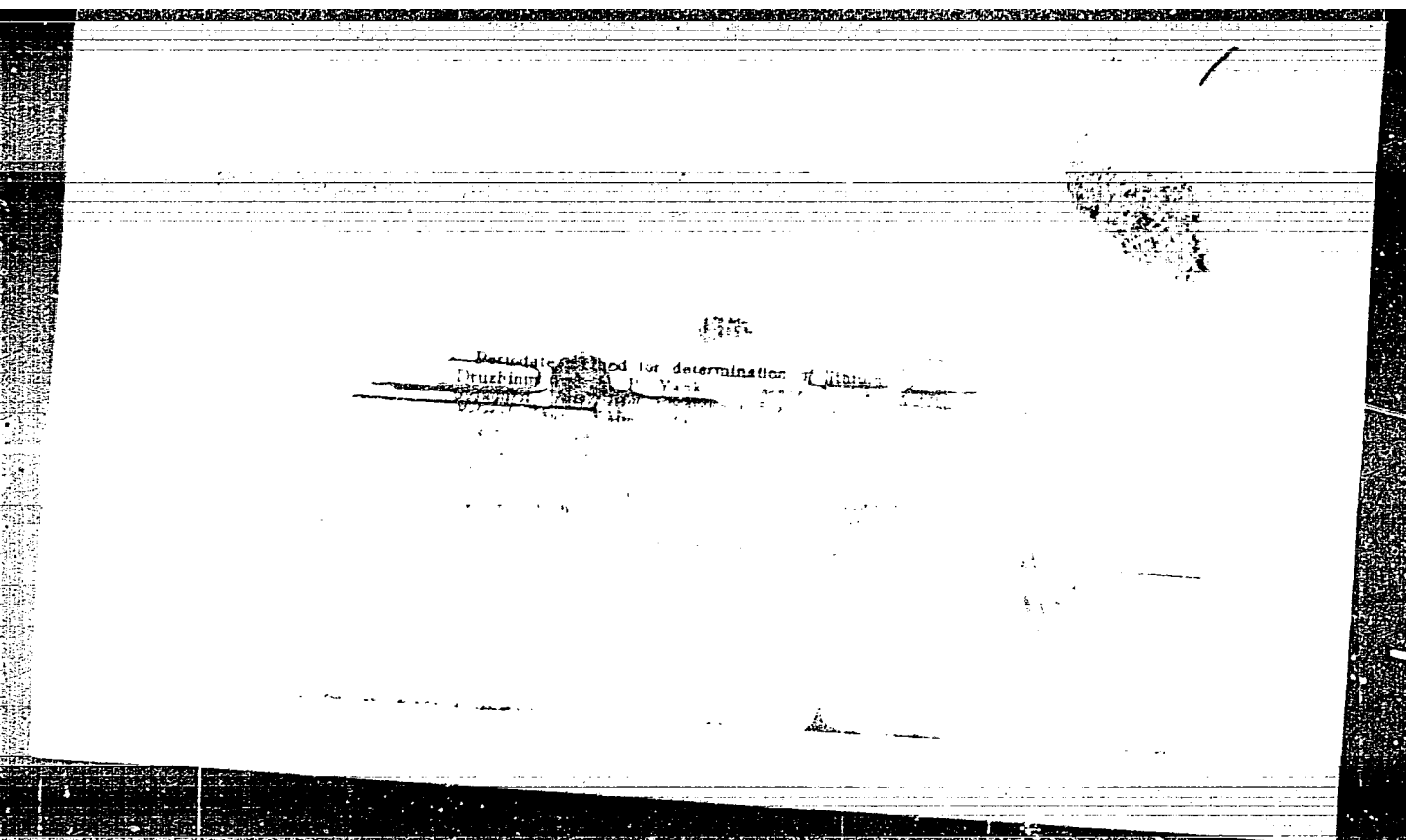
of sodium perchlorate monohydrate. This isotherm differs sharply from that obtained by Freeth who plotted only 5 points. This curve has 25 points. Presented by Acad I. I. Chernyayev 9 Apr 52.

223712

DRUZHININ, I. G.

DRUZHININ, I.G.; YANKO, A.P.

Periodate method of determining lithium. Uch.zap.Biol.-pochv.fak.
Kir.un. no.3:3-6 '52. (Lithium--Analysis) (MLRA 10:5)
(Potassium periodates)



Hydrochemical characteristic of surface and underground waters of the
Ebeyty lake region. Gidrokhim.mat. no.20:35-45 '53. (MLRA 7:3)

1. Laboratoriya perokisnykh soyedineniy Akademii nauk SSSR, Moskva.
(Ebeyty, Lake--Hydrology) (Hydrology--Ebeyty, Lake)

IBRAGIMOV, A.Kh.; DRUZHININ, I.G., redaktor; SEREBRYAKOV, V.I., tekhnicheskoy redaktor

[Stock salt resources of Kirghizistan] Resursy kormovoi soli
Kirgizii, Frunze, Izd-vo Akademii nauk Kirgizskoi SSR, 1955. 15 p.
(Kirghizistan--Salt) (MIRA 9:9)

DRUZHININ, Ivan Georgiyevich, professor; SHEPELEV, A.I., dotsent;
DISTANOV, G.K., otvetstvennyy redaktor

[Physical and chemical study of modifications of calcium chloride
tetrahydrate] Fiziko-khimicheskoe izucheniye modifikatsii chetyrekh-
vodnogo khlorigo kul'tsila. Frunze, Kirgizskii gos.univ., 1955.
63 p. (MIRA 10:1)

(Calcium chloride)

✓ 2500 Internal electrolysis as an analytical method
for the determination of small quantities of certain
elements. *Trudy Inst. Khim. Akad. Nauk SSSR* 1955, 11, 145. *Tr. Zhur. Khim.* 1955, 8, 37-44. Possibilities are indicated for
use of internal electrolysis for the determination of
metals in samples of biological origin in toxicological
studies. Internal electrolysis can separate almost
completely Ag, Cu, Bi and Hg in a sulphate solution
obtained after decomposition of the sample in
 HNO_3 , H_2SO_4 . The four elements can be quanti-
tatively determined with satisfactory accuracy in
about 1 hr. The use of a graphite electrode for the
separation instead of the expensive platinum
electrode is sometimes possible. C. D. Korkin

2
M.K.

FRIDMAN, Ye.D.; ZINOV'YEV, A.A.; LOPINA, M.D.; DRUZHININ, I.G., redaktor;
TSYBINA, Ye.V., tekhnicheskiiy redaktor

[Binary sulfates of sodium and calcium and ways of processing them
in natural deposits] Dvoinye sul'faty natriia i kal'tsiia i puti
pererabotki ikh prirodnykh otloshenii. Frunze, Izd-vo Akademii nauk
Kirgisskoi SSR, 1956. 133 p. (MLM 10:1)
(Sodium sulfate) (Calcium sulfate)

DENISOV, P.V.; DRUZHININ, I.O.; BELOVA, O.I.; KADYROV, V.

Hydrochemical characteristics of rivers in the Chu Basin. Trudy
Inst.vod.khoz.i energ.AN Kir.SSR no.3:123-126 '56. (MLRA 9:11)
(Chu Valley--Rivers) (Water--Analysis)

DENISOV, P.V.; BELOVA, O.I.; KADYROV, V.; DRUZHININ, I.G.

Hydrochemical characteristics of rivers of the Issyk-Kul' Basin.
Trudy Inst.vod.khoz.i energ.AN Kir.SSR no.3:127-137 '56. (MLBA 9:11)
(Issyk-Kul' Province--Rivers) (Water--Analysis)

Category: USSR / Physical Chemistry
Thermodynamics. Thermochemistry. Equilibrium. Physico-
chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29954

Author : Druzhinin I. G., Shepelev A. I.
Inst : ~~Institute of Chemistry~~, Academy of Sciences Kirgiz SSR
Title : Quaternary System Calcium- and Sodium Chloride - Hydrogen Chloride -
- Water.

Orig Pub: Tr. In-ta khimii AN KirgSSR, 1956, No 7, 3-17

Abstract: Investigation, at 25° , of solubility, and also of density and viscosity, of saturated solutions of the system CaCl_2 - NaCl - HCl - H_2O (I), and of the included therein systems of NaCl - HCl - H_2O (II), CaCl_2 - NaCl - H_2O (III) and CaCl_2 - HCl - H_2O (IV). In system I neither acid salts nor hydrates are formed, properties vary in accordance with continuous curves having minima. It was found that in system II, alpha-, beta- and gamma-modifications of $\text{CaCl}_2 \cdot 4\text{H}_2\text{O}$, can separate from metastable solutions, at NaCl concentrations up to

Card : 1/2

-74-

Category: USSR / Physical Chemistry
Thermodynamics. Thermochemistry. Equilibrium. Physico-
chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29954

0.5 mol.%. System IV is characterized by the presence, alongside with stabile, of metastabile regions of separation of all three modifications of tetrahydrate and $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$. Metastabile solutions have higher viscosity and density than the stabile solutions. The very small fields of tetrahydrates of alpha- and beta-modification, and of the dihydrate, are stretched out as a narrow strip along the $\text{CaCl}_2 - \text{H}_2\text{Cl}_2$ side.

Card : 2/2

-75-

~~RUSSIAN~~
BLESHTINSKIY, S.V.; DRUZHININ, I.G.; ABRAMOVA, V.F.; BLAKITNAYA, L.P.

Application of fertilizers and means for fighting forest and fruit
pests. Trudy Inst.khim. AN Kir.SSR no.7:137-143D '56.

(MIRA 10:3)

(Fertilizers and manures) (Trees--Diseases and pests)

DRUZHININ, I.B.

TIL'MANS, Yu.Ya.; DRUZHININ, I.O., redaktor; TSYBINA, Ye.V., tekhnicheskiy redaktor.

[Crystallization of salts from aqueous solutions in the presence of admixtures of various ions] Kristallizatsiya solei iz vodnykh rastvorov v prisutstviy primesei raznykh ionov. Frunze, Izd-vo Akad.nauk Kirgizskoi SSR, 1957. 205 p. (MLRA 10:4)
(Crystallisation)

DRUZHININ, I.G., akademik; ISAYEV, D.I., kand.geograf.nauk

Peat deposits of the Kirghiz S.S.R. Zbor.st.po izuch.torf.fonda
no.2:147-156 '57. (MIRA 11:8)

1.AN Kirgizskoy SSR (for Drushinin). 2. Kirgizskiy gosudarstvennyy
universitet (for Isayev).
(Kirghisistan--Peat)

KYDYNOV, M.; DRUZHININ, I. G.

Solubility of the system of calcium and sodium sulfates at
0, 20, 40, 60, and 80° C and the Tien Shan glauberite rocks.
Izv. AN Kir.SSR no.4:89-117 '57. (MLRA 10:7)
(Tien Shan--Glauberite) (Crystallization)

DRUZHININ, I.G., red.; ANOKHINA, M.G., tekhn.red.

[Works of young scientists in the Academy of Sciences of the
Kirghiz A.S.S.R.] Trudy molodykh nauchnykh rabotnikov AN
Kirgizskoi SSR. Frunze, 1958. 409 p. (MIRA 12:12)

1. Akademiya nauk Kirgizskoy SSR, Frunze.
(Science--Collected works)

DRUZHININ, I.G.

KYDYNOV, M., nauchnyy sotrudnik; BATYRCHAYEV, I.; LOPINA-SHENDRIK, M.D.;
KALBAYEV, A.; IMANAKUNOV, B.; SULAYMANKULOV, K., kand.khim.nauk;
DUYSHENALIYEVA, N.; AKBAYEV, A.; KAZIYEV, K.; GOLOVIN, F.I.;
BAKASOVA, Z.; KOVALENOK, Z.P.; SHELUKHINA, N.P.; BUGUBAYEV, A.B.,
starshiy prepodavatel'; BAYBULATOV, E.B., mladshiy nauchnyy
sotrudnik; FILIPPOV, N.A., mladshiy nauchnyy sotrudnik; MAMBETA-
KUNOV, T., aspirant; IMANKULOV, A., aspirant; TURMAMBETOV, S.,
mladshiy nauchnyy sotrudnik; MUKHAMEDZIYEV, M.M., nauchnyy sotrudnik;
KONURBAYEV, A.O.; PAK, L.V.; HUDAKOV, O.L.; TOKTOSUNOV, A.;
KULAKOVA, R.I.; ASHIRAKHMANOV, Sh., aspirant; ALYSHBAYEV, B.;
SULTANALIYEV, A.; AKHMETOV, K.; POLONOVA, A.P.; NIKITINSKIY, Yu.I.;
SHAMBETOV, S.Sh.; DZHUMBAYEV, B.O., nauchnyy sotrudnik; DRUZHININ,
I.G., red.; ANOKHINA, M.G., tekhn.red.

[Papers by junior scientists of the Academy of Sciences of the
Kirghiz S.S.R.] Trudy molodykh nauchnykh rabotnikov AN Kirgizskoi
SSR. Frunze, 1958. 411 p. (MIRA 12:9)

(Continued on next card)

KYDYNOV, M.---(continued) Card 2.

1. Akademiya nauk Kirgizskoy SSR, Frunze.
 2. Institut khimii AN Kirg.SSR (for Kydynov).
 3. Kirgizskiy gosudarstvennyy universitet (for Bugubayev).
 4. Institut geologii AN Kirg.SSR (for Baybulatov).
 5. Institut vednogo khozyaystva i energetiki AN Kirg.SSR (for Filippov).
 6. Otdel fiziki i matematiki AN Kirg.SSR (for Mambetkunov, Imankulev).
 7. Institut zoologii i parazitologii AN Kirg.SSR (for Turmambetov).
 8. Kirgizskiy meditsinskiy institut (for Mukhamedziyev).
 9. Otdel pechvovedeniya AN Kirg.SSR (Ashirakhmanov).
 10. Institut botaniki AN Kirg.SSR (for Alyshbayev, Sultanaliyev, Akhmetov, Polenova, Nikitinskiy).
 11. Institut istorii AN Kirg.SSR (for Dzhambayev).
- (Science--Collections)

ISAYEV, D.I.; DRUZHININ, I.G.

Peat bogs in the Kirghiz S.S.R. Trudy Otd.geog.i Tian.fiz.-
geog.sta,AN Kir.SSR no.1:67-75 '58. (MIRA 12:2)
(Kirghizistan--Peat bogs)

5(4)

AUTHORS:

Shevchuk, V. G., Druzhinin, I. G.

SOV/153-58-2-5/30

TITLE:

The Solubility of Salts in the System of $\text{ZnSO}_4 - (\text{NH}_4)_2\text{SO}_4 - \text{H}_2\text{O}$
at 35 and 50°
(Rastvorimost' soley v sisteme $\text{ZnSO}_4 - (\text{NH}_4)_2\text{SO}_4 - \text{H}_2\text{O}$ pri 35 i 50°)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya
tekhnologiya, 1958, Nr 2, pp 25-30 (USSR)

ABSTRACT:

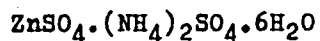
Only few data on the common solubility of zinc and ammonium sulfates in water are available as yet (Refs 1-3). The study of this system within a wide temperature range is necessary for establishing the production of pure zinc sulfate from mother lyes of some waste matters of the halurgical industry. A comprehensive survey of the corresponding literature written since M. V. Lomonosov's time is given (Refs 4-7). The authors also give a study of the ternary system, as mentioned in the title. Then an experimental section follows. Table 1 and figure 1 show that the solubility isotherm of zinc and ammonium sulfate in water at 35° is characterized by three branches.- By adding small quantities of ammonium sulfate a double salt can be immediately obtained. For that reason, the authors could never

Card 1/3

The Solubility of Salts in the System of
 $\text{ZnSO}_4-(\text{NH}_4)_2\text{SO}_4-\text{H}_2\text{O}$ at 35 and 50°

SOV/153-58-2-5/30

obtain even one single element of the remainder of the curve branch concerned. Point 2 is eutonic. The branch from 3 to 16 corresponds to the crystallization of the compound:



Point 17 is eutonic too. Figure 2 and table 2 show that the temperature increase from 35° to 50° is favorable for the formation of double salt. The first branch of the curve from point 1 to 3 corresponds to the separation of $\text{ZnSO}_4 \cdot 6\text{H}_2\text{O}$. The branch of the double salt is somewhere between point 5 and 17. Points 5 and 18 are eutonic. By adding minimal quantities of zinc sulfate to the saturated solution of ammonium sulfate double salt is immediately obtained. In order to give a more complete characterization of the ternary system its solid phases were examined by physico-chemical analysis. The results obtained confirm as a whole the documentary data mentioned in references (Fig 3)(Table3). Moreover, the thermogram of the double salt concerned has been also deciphered. (Fig 4).

Card 2/3

The Solubility of Salts in the System of
 $\text{ZnSO}_4-(\text{NH}_4)_2\text{SO}_4-\text{H}_2\text{O}$ at 35 and 50°

SOV/153-58-2-5/30

There are 4 figures, 3 tables, and 12 references, 7 of which
are Soviet.

ASSOCIATION: Yaroslavskiy pedagogicheskiy institut .
(Yaroslavl Institute of Pedagogy).
Kafedra khimii
(Chair of Chemistry)

SUBMITTED: September 10, 1957

Card 3/3

DRUZHININ, I.G.; KHARAKOZ, A.Ye.; ZINOV'YEV, A.A., red.; SEMIKINA,
T.F., red.isd-vs; ANOKHINA, M.G., tekhn.red.

[Physicochemical characteristics of the peat of Kirghizistan]
Fiziko-khimicheskaya kharakteristika torfa Kirgizii. Frunze,
Izd-vo Akad.nauk Kirgizskoi SSR, In-t khimii, 1959. 95 p.
(MIRA 13:7)

(Kirghizistan--Peat)

DRUZHIIN, I G.

P.2

PHASE I BOOK EXPLOITATION

SOV/3618

Akademiya nauk Kirgizskoy SSR

Izvestiya. Seriya yestestvennykh i tekhnicheskikh nauk, tom 1, vyp. 1
(News Series on Natural and Technical Sciences, Vol 1, No. 1)
Frunze, 1959. 164 p. 500 copies printed.

Ed.: F.T. Kashirin; Tech. Ed.: M.G. Anokhina.

PURPOSE: This book is intended for research scientists and teachers in institutes of higher education who may be interested in developments and research trends in various scientific fields.

COVERAGE: The book contains 12 articles by persons affiliated with the Academy of Sciences Kirgiz SSR on studies in physical chemistry, industrial chemistry, applied physics (blasting dynamics), electric power engineering, electronics, agronomy, metallurgy, pure mathematics, etc. A bibliography of 1957 publications of the Academy includes works on history, archeology, economics, linguistics, literature, geology, biological sciences (botany, zoology, medicine), and technology. No personalities are mentioned. References accompany most of the articles.

Card 1/3

News. Series (Cont.)

SOV/3618

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SOV/3618

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Buyko, V.M., N.A. Imanaliyeva, A.V. Poltavskiy, and Yu.S. Terminasov.
X-Ray Study of the Thermal Effect on Steel Samples Hardened After
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Imanaliyev, M. General Boundary Value Problem for a Nonlinear
Integrodifferential Equation With Small Parameter at the Highest
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Erman, L.M., and M.M. Gerasimova. Bibliography of Publications
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AVAILABLE: Library of Congress (Q 60.A516A2)

Card 3/3

TM/jb
6-7-60

KHARITONOV, Grigoriy Vasil'yevich; DRUZHININ, I.G., otv.red.;
VOZHEYKO, I.V., red.isd-va; USPANOV, Zh.Ye., otv. za
vypusk; ANOKHINA, M., tekhn.red.

[Effect of various structural features on coal properties]
Vliianie otchel'nykh strukturnykh elementov na svoistva uglei.
Frunze, Izd-vo Akad.nauk Kirgizskoi SSR, 1960. 264 p.
(MIRA 13:12)

(Coal--Analysis)

BLESHINSKIY, S.V.; DRUZHININ, I.G.; MUSTAYEV, A.K.; LEVANEVSKIY, O.Ye.;
TASKAYEV, N.D.; ODINTSOV, V.M.

Prospects for the development of the chemical industry in
Kirghizistan. Izv.AN Kir.SSR.Ser.est.1 tekhnauk 2 no.3:3-18
'60. (MIRA 13:9)
(Kirghizistan--Chemical industries)

DRUZHININ, I.O.; MAKIN, A.V.

Solubility isotherm of the ternary system Na_2SO_4 - Na_2HPO_4 - H_2O .
Izv.AN Kir.SSR.Ser.est.1 tekhn.nauk 2 no.3:19-24 '60.
(MIRA 13:9)

(Sodium sulfate)

(Sodium phosphate)

DRUZHININ, I.G.; KUZNETSOV, V.G.; IMANAKUNOV, B.

Polytherm of a system consisting of nickel sulfate, aluminum sulfate, sodium sulfate, and water at 25-65°, and its solid phases.
Izv. AN Kir.SSR. Ser. est. 1 tekhn. nauk 2 no. 3:25-49 '60.

(MIRA 13:9)

(Nickel sulfate)
(Aluminum sulfate)
(Sodium sulfate)

DRUZHININ, I.G.; DUYSHENALIYEVA, N.D.

Solubility of urea and manganese sulfate in water and the solid
phases present. Izv. AN Kir. SSR. Ser. est. i tekhn. nauk 2 no. 3:85-92
'60. (MIRA 13:9)

(Urea)

(Manganese sulfate)

DRUZHININ, I.G.; ARBAYEV, S.A.

Solubility and the solid phases of ternary systems consisting of
sucrose, sodium chloride, potassium chloride, and water at 20,
40, and 60°. Izv. AN Kir. SSR. Ser. est. i tekhn. nauk 2 no. 3:
95-102 '60. (MIRA 13:9)
(Sucrose) (Salt) (Potassium chloride)

DRUZHININ, I.G.; AKBAYEV, A.

Hydrated trisalt of copper arsenate and sulfate. Izv. AN Kir.
SSR. Ser. est. i tekhn. nauk 2 no.11:5-11 '60. (MIRA 14:10)
(Copper arsenate) (Copper sulfate)

DRUZHININ, I.G.; KAYKIYEV, A.

Composition and property diagrams of aqueous equilibrium solutions
from urea with nickel and iron sulfates at 25° and 40° C.
Izv. AN Kir. SSR. Ser. est. i tekhn. nauk 2 no.11:13-20 '60.

(MIRA 14:10)

(Nickel sulfate)

(Iron sulfate)

(Urea)

DRUZHININ, I.G.; KYDYNOV, M.

Tertiary system of ceric sulfates, calcium sulfates and water
at 25 °C. Izv. AN Kir. SSR. Ser. est. i tekhn. nauk 2 no.11:
21-26 '60. (MIRA 14:10)
(Cerium sulfate) (Calcium sulfate)

DRUZHININ, I.G.; KALBAYEV, A.

Isotherms of the tertiary system from aluminum sulfates,
ammonium sulfates and water at 10°, 25°, 40°, 60° C. Izv.
AN Kir. SSR. Ser. est. 1 tekhn. nauk 2 no.11:165-176 '60.

(MIRA 14:10)

(Aluminum sulfate)

(Ammonium sulfate)

DRUZHININ, I.G.; GOROKHOVA, V.N.

Study of ternary aqueous systems consisting of manganese
and sodium chlorides and manganese chloride and sulfate at 25° C.
Izv.vys.ucheb.zav; khim.i khim.tekh. 4 no.5:765-771 '61.

(MIRA 14:11)

1. Kirgizskiy gosudarstvennyy universitet, kafedra khimii.
(Systems (Chemistry))

DRUZHININ, I.G.; KOSYAKINA, O.A.

Solubility of solid phases in the aqueous reciprocal system
 $\text{CuCl}_2 + \text{Na}_2\text{SO}_4 \rightleftharpoons \text{CuSO}_4 + \text{Na}_2\text{Cl}_2$ at 25°. Zhur. neorg. khim. 6
no.7:1702-1712 J1 '61. (MIRA 14:7)
(Systems (Chemistry))

SULAYMANKULOV, K.; DRUZHININ, I.G.

Solubility isotherm of the system urea- Cadmium sulfate Sulfate-water
at 30°. Zhur. neorg. khim. 6 no.7:1724-1726 Jul '61.
(Urea) (Cadmium sulfate)

DUYSHENALIYEVA, N.; SULAYMANKULOV, K.; DRUZHININ, I.G.

Solubility, specific gravity, and viscosity isotherms of the
system $\text{ZnSO}_4 - \text{CO}(\text{NH}_2)_2 - \text{H}_2\text{O}$ at 30°. Zhur.neorg.khim. 6
no.8:1919-1921 Ag '61. (MIRA 14:8)
(Zinc sulfate) (Urea)

DRUZHININ, I.G.; IMANAKUNOV, B.; KUZNETSOV, V.G.

Study of some physicochemical properties of nickel astrakhanite.
Zhur.neorg.khim. 6 no.11:2576-2581 '61. (MIRA 14:10)
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DRUZHININ, I.G.; BATYRCHAYEV, I.Ye.

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Zhur.prikl.khim. 34 no.11:2370-2378 N '61. (MIRA 15:1)
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DRUZHININ, I.G., akademik; AKBAYEV, A.

System consisting of copper and sodium arsenates and carbonates.
Dokl.AN SSSR 137 no.6:1364-1367 Ap '61. (MIRA 14:4)

1. Institut neorganicheskoy i fizicheskoy khimii Akademii nauk
KirgSSR. 2. Akademiya nuak KirgSSR (for Druzhinin).
(Systems (Chemistry))

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Ternary system urea - nickel sulfate - water at 25 and 40°C.

Izv.vys.ucheb.zav.; khim.i khim.tekh. 5 no.1:3-6 '62.

(MIRA 15:4)

1. Kirgizskiy gosudarstvennyy universitet, kafedra khimii.

(Urea) (Nickel sulfate) (Systems (Chemistry))

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Izv.vys.ucheb.zav.; khim.i khim. kh. 5 no.1:7-11 '62.

(MIRA 15:4)

1. Kirgizskiy gosudarstvennyy universitet, kafedra khimii.
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DRUZHININ, I.G.; BUGUBAYEV, A.B.; KANYGINA, K.I.

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Biol.-pochv. fak. Kir. un. no. 145-153 '58. (MIRA 15:10)
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DRUZHININ, I.G.; BAKASOVA, Z.; ARBAYEV, S.A.; IMANAKUNOV, B., otv. red.;
VZHEYKO, I.V., red. izd-va; ANOKHINA, M.G., tekhn. red.

[Reaction of saccharose with sodium, potassium, calcium, and
magnesium chlorides] Vsaimeistvie sakharozy s khloridami nar-
tiia, kaliia, kal'tsiia i magniia. Frunze, Izd-vo Akad. nauk
Kirgizskoi SSR, 1962. 145 p. (MIRA 16:2)
(Sucrose) (Alkali metal chlorides)
(Alkaline earth chlorides)

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New chemical compounds based on copper and sodium arsenate,
carbonate, and sulfate. Izv.AN Kir.SSR.Ser.est.1 tekhnauk 4
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(Systems (Chemistry)) (Salts)

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Double compounds of urea and manganese chloride. Izv.AN Kir.
SSSR.Ser.est.1 tekhn.nauk 4 no.9:21-32 '62. (MIRA 16:4)
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Ser.est.1 tekhnauk 4 no.9:61-80 '62. (MIRA 16:4)
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Solubility isotherm of aluminum sulfate in water. Izv.AN Kir.
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(Iron sulfates) (Urea)

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Izv. AN Kir. SSR, Ser. est. i tekhn. nauk 4 no. 9: 111-121 '62.

Izv. AN Kir. SSR, Ser. est. i tekhn. nauk 4 no. 9:111-121 '62.

(MIRA 16:4)

(Aluminum sulfates)

(Sodium sulfate)

(Solubility)

DRUZHININ, I.G.; DUYSHENALIYEVA, N.

Properties of double compounds of urea, manganese sulfate, and
water. Izv.AN Kir.SSR.Ser.est.1 tekhnauk 4 no.9:123-127 '62.
(MIRA 16:4)

(Urea)

(Manganese sulfates)

DRUZHININ, I.G.; KYDYNOV, M.; LOMTEVA, S.A.

Physicochemical characteristics of the Alabug-Naryn salt bed.
Zhur. prikl. khim. 36 no.11:2408-2413 N '63.

(MIRA 17:1)

DEUZHININ, I.G.; AKHAYEV, A.

Water systems consisting of sulfates and arsenates of copper
and sodium at 25 and 50°C. Zhur. prikl. khim. 37 no.6:1194-
1199 Je '64. (1974 18:3)

DRUZHININ, I.G., akademik; KYDYNOV, M.; LOMTEVA, S.A.

Ternary compound consisting of lithium, sodium, and ammonium
sulfates. Dokl. AN SSSR 157 no.4:910-912 Ag '64
(MIRA 17:8)

1. Institut neorganicheskoy i fizicheskoy khimii AN KirgSSR.
2. AN KirgSSR (for Druzhinin).

DRUZHININ, I.I.

133-58-3-6/29

AUTHORS: Glazkov, P.G., Ofengenden, A.M., Druzhinin, I.I.,
Nesterovich, R.P. and Chepurnoy, G.T., Engineers

TITLE: Smelting of Steel from Low Manganese Iron (Vyplavka stali
iz malomargantsovistogo chuguna)

PERIODICAL: Stal', 1958, Nr 2, pp 209 - 213 (USSR)

ABSTRACT: The influence of low-manganese iron on the operation of open-hearth furnaces and the quality of the metal produced was carried out by a comparative study of the individual operating factors for heats in which low-manganese iron (256 heats) and normal iron (222 heats) were used. Heats carried out on the same furnace were usually compared. Low-manganese iron was poured directly into open-hearth furnaces while normal iron for about 40% of heats was passed through a mixer. Smelting of steel was carried out by the scrap-ore process in 130-ton open-hearth furnaces with magnesite chromite roofs, fired with a mixture of coke-oven and blast furnace gas. Due to the high sulphur content in the coke oven gas (13-16 g/m³) a considerable amount of limestone was used in the charge, about 90 kg/ton of finished steel. During smelting slag was changed twice during the melting and refining periods with subsequent making of fresh slag by lime additions. Heats were intensive and hot with the

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reduction of manganese, the content of which during pure boiling was not controlled. Chemical composition of low-manganese pig: % Si 0.79, Mn 0.91, S 0.034 and that of normal pig: % Si 0.78, Mn 1.86, S 0.046 (Fig.1). Frequency distribution of the manganese content after melting (A) and before deoxidation (B) - Fig.2; changes in the slag composition during smelting with low-manganese pig (nominator) and ordinary pig (denominator) - Table 1; frequency distribution of sulphur in the finished metal - Fig.3; the dependence of the sulphur content in the metal after melting on the sulphur content of the pig - Fig.4; the dependence of sulphur content in metal after melting on the duration of charging and heating of the charge - Fig.5; the dependence of the velocity of desulphurisation and sulphur content at the beginning of boiling on sulphur content of metal after melting - Fig.6; frequency distributions of phosphorus during various smelting periods - Fig.7; and the influence of the transfer to smelting low-manganese iron on the consumption of materials and related to it, the cost of production of steel - Table 2. Conclusions: The content of manganese in metal during the finishing period in heats with low-manganese pig was lower by 0.02-0.04% than that in heats with the usual pig, although the transfer of manganese from charge

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to metal was increased from 31.8 to 42%. On transfer to low-manganese pig, the condition for the desulphurisation of the metal bath deteriorated and the content of sulphur in metal after melt out increased on average by 0.004%. This led to a prolongation of the finishing period and an approximately 1% decrease in the output of open-hearth furnaces. The production of metal with a required low sulphur content becomes more difficult. In heats with low-manganese pig, the content of sulphur in metal after the melt out increases with increasing sulphur content of pig, while with the usual pig, its sulphur content up to 0.05% has no influence on the sulphur content of metal after the melt out. The transfer to low-manganese pig had no influence on desulphurisation of the bath during refining, on the removal of phosphorus and on the process of slag formation, but the yield of good metal increased by 0.3%, the consumption of ore decreased by 0.75 kg/ton of steel and the amount of ferro-manganese used for deoxidation increased by 1.1kg/ton of steel. The quality of steel produced from low-manganese pig did not deteriorate while the production costs somewhat decreased (by 11.62 roubles/ton). The application of low-manganese pig for the production of steel would be effective

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if coke oven gas used for firing was desulphurised.

There are 2 tables and 7 figures and 9 Soviet references.

ASSOCIATION: Stalinskiy metallurgicheskiy zavod
(Stalino Metallurgical Works)

AVAILABLE: Library of Congress

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S/130/62/000/007/001/001
A006/A101

AUTHORS: Grigor'yev, F. N., Druzhinin, I. I., Osipov, V. G.
TITLE: Teeming 260 tons of steel on a continuous casting unit YHPC (UNRS)
without interrupting the steel stream

PERIODICAL: Metallurg, no. 7, 1962, 22

TEXT: At the Donetsk Metallurgical Plant a system became operative in March 1961 for the continuous teeming of steel on a four-runner unit. In the past year tests were successfully performed with continuous-casting two heats without interrupting the metal stream. A total amount of 257.17 tons of steel was cast under conditions given in a table, which shows that over 70 tons of metal were passed through each of the three nozzles of the intermediate ladles. Teeming was performed through zirconium nozzles 22 mm in diameter, 18.8 - 19.2% porosity, 2.97 - 3.01 g/cm³ volumetric weight, 1,900°C heat resistance, and 53% ZrO₂ and 0.54% Fe₂O₃ content. Considering the successful casting of 140-ton heats with two runners (70 tons through each nozzle) the possibility of casting 250-ton heats with the aid of 4 runners is practically proved. There are 1 figure and 1 table.
ASSOCIATION: Donetskii metallurgicheskiy zavod (Donetsk Metallurgical Plant) ✓

Card 1/1

GLAZKOV, P.G., inzh.; SLADKOSHTEYEV, V.T., kand.tekhn.nauk; TELESOV, S.A.,
inzh.; OFENGENDEN, A.M., inzh.; STRELETS, V.M., kand.tekhn.nauk;
MURZOV, K.P., inzh.; Prinimali uchastiye: MALAEHA, A.V.; DRUZHININ,
I.I.; YELIOSOF, A.V.; YEVTUSHENKO, V.B.; OSIPOV, V.G.; BABASKIN,
Yu.Z.; SLIN'KO, A.N.; ZELENOV, S.N.; GENKIN, V.Ya.; PITAK, N.V.;
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'61. (MIRA 14:11)

(Continuous casting--Equipment and supplies)

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POKRASS, L.M.; DRUZHININ, I.I.; OSIPOV, V.G.; KONDRATYUK, A.M.;
POLYAKOV, I.V.; GORDIYENKO, M.S.; PAVLOV, M.T.; KOPYTIN, A.V.;
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Continuous casting of 140-ton steel heats with four-channel
equipment. Stal' 22 no. 6:501-504 Je '62. (MIRA 16:7)

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POTANIN, R.V.; AKHRYRSKIY, V.I.; DRUZHININ, I.I.

Continuous casting of low-carbon steel into wide slab ingots.
Sbor. trud. UNIIM no.9:135-145 '64 (MIRA 18:1)

MURAV'YEV, V.N.; AKHTYRSKIY, V.I.; Primeneniye obshchego: SLIN'KO, A.N.;
POTANIN, R.V.; DRUZHININ, I.I.; OSIPOV, V.G.; KUCHMINSKIY, Yu.M.

Nature of the nonmetallic inclusions in flat continuously
cast ingots. Sbor.trud. UNITM no.11.0112-123 '65.

(MIRA 18:11)

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SLIN'KO, A.N.; Prinimali uchastiye: GRIGOR'YEV, F.N.; DRUZHININ,
I.I.; OSIPOV, V.G.; PARASHCHENKO, R.A.; KOPYTIN, A.V.; KOLESNIK,
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UNIIM no.11:124-130 '65.

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SO: Knizhnaya Letopis', No. 40, 1 Oct 55